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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,095	01/28/2004	John P. Hollis	20-83	9831

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EXAMINER

GREENE, JASON M

ART UNIT PAPER NUMBER

1724

DATE MAILED: 02/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/765,095

Applicant(s)

HOLLIS, JOHN P.

Examiner

Jason M. Greene

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 28 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Legare (US 5,979,030).

Legare discloses an air filter for a vehicle air conditioning/handling system (see col. 6, lines 37-40) comprising a pleated filter material having a high efficiency and a frame (not shown, required to support the filter material) for securely holding outer edges of the pleated filter material, said pleated filter material comprising a fiber composition of modacrylic/polypropylene and a carrier composition of spunbond polyester, the fiber composition being 30-300 g/m² and the carrier composition being 10-16 g/m² in col. 1, line 19 to col. 6, line 40. While the reference is silent as to the specific MERV of the filter material, it is much greater than 1 since the material is disclosed as having 95-97% efficiency against sodium chloride aerosol in col. 5, lines 54-67.

3. Claims 1, 5, 12 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Chapman (US 6,322,615 B1).

Chapman discloses an air filter usable in a vehicle air conditioning/handling system comprising a pleated filter material (2,3) having a MERV of 7-15, a frame for securely holding outer edges of the pleated filter material, and wire mesh (1) positioned on one side of the pleated material with outer edges of said wire mesh being within the frame in Figs. 1 and 2 and col. 1, line 31 to col. 5, line 20.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 6, 9, 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Legare or Chapman in view of Choi et al. (US 6,758,878 B2) and Dudley (US 5,906,677).

With regard to claims 2, 9 and 11, Legare is silent as to the depth of the frame and Chapman discloses the frame having a thickness of 0.5 to 3 inches in col. 6, lines 60-63.

Legare and Chapman do not disclose the frame having a depth less than 0.220 inches, the rails being no more than 0.625 inches in width, or the frame being molded.

Choi et al. discloses a similar air filter comprising a pleated filter media (2) and a glued (thermobonded) frame (11), wherein the depth of the filter media and the frame is as low as 0.05 inches in Figs. 4, 5 and 7 and col. 3, line 26 to col. 5, line 20.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the depth of Choi et al. into the air filters of Legare or Chapman depending on the nature of the fluid stream to be treated, as suggested by Choi et al. in col. 3, lines 39-41.

Dudley et al. discloses an air filter (10) having a frame (38) molded from a sheet of material having a width of 1 inch in Fig. 4 and col. 3, line 26 to col. 4, line 33. Since the frame is formed by folding the sheet over to form the channel (40), each of the rails will be less than 0.5 inches in width.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the narrow rails of Dudley et al. into the air filter of Legare or Chapman to reduce the amount of material required to manufacture the frame to reduce production costs.

With regard to claims 6 and 13, Chapman discloses the filter material having a MRV of 7-15 and wire mesh (1) positioned on one side of the pleated material with outer edges of said wire mesh being within the frame in Figs. 1 and 2 and col. 1, line 31 to col. 5, line 20.

6. Claims 3, 4, 7, 8 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman in view of Legare.

With regard to claims 3 and 4, Chapman discloses the filter material comprising a fiber composition (2) of polypropylene having a basis weight of 0.8 oz/yd² (27.1 g/m²) and a carrier composition (3) of spunbond (air laid) polyester having a basis weight of 1.0 oz/yd² (33.9 g/m²) in Figs. 1 and 2 and col. 4, line 24 to col. 6, line 50.

Chapman does not disclose the fiber composition being modacrylic/polypropylene or the fiber composition and carrier composition having the recited basis weights.

Legare discloses a filter material comprising a fiber composition of modacrylic/polypropylene and a carrier composition of spunbond polyester, the fiber composition being 30-300 g/m² and the carrier composition being 10-16 g/m² in col. 1, line 19 to col. 6, line 40.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the modacrylic/polypropylene of Legare for the polypropylene of Chapman to provide a filter material having a stable electrostatic charge and a high collection efficiency, as suggested by Legare in col. 2, line 44 to col. 3, line 39. It would have also been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the basis weights of Legare into the fiber

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composition and carrier composition of Chapman to provide a filter media having desired collection efficiency and pressure drop for a given application.

With regard to claims 7, 8 and 14, Chapman discloses the filter material having a MRV of 7-15 and wire mesh (1) positioned on one side of the pleated material with outer edges of said wire mesh being within the frame in Figs. 1 and 2 and col. 1, line 31 to col. 5, line 20.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Legare or Chapman in view of Wittemeier et al. (US 2,988,168).

Legare and Chapman do not disclose the frame being sewn.

Wittemeier et al. discloses a similar air filter wherein the frame (2) is formed from a foam rubber material and is sewn (3) in Figs. 1 and 2 and col. 4, lines 5-10.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the foam rubber frame and sewing of Wittemeier et al. into the frames of Legare or Chapman to allow the frame to be formed from a soft pliable material can also serve to form an air tight seal for the air filter, as is well known in the art.

8. Claims 16, 18, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman in view of Dudley (US 5,906,677).

Chapman discloses a method of making an air filter usable in a vehicle air conditioning/handling system comprising assembling a rectangular frame from front and back frame rails and me from front and back frame rails, positioning outer edges of a pleated filter material (2,3) having a MERV of 7-15 within the rectangular frame, and positioning a wire mesh (1) on one side of the pleated material with outer edges of said wire mesh being within the frame in Figs. 1 and 2 and col. 1, line 31 to col. 5, line 20.

Chapman does not disclose the rails being no more than 0.625 inches in width.

Dudley et al. discloses an air filter (10) having a frame (38) molded from a sheet of material having a width of 1 inch in Fig. 4 and col. 3, line 26 to col. 4, line 33. Since the frame is formed by folding the sheet over to form the channel (40), each of the rails will be less than 0.5 inches in width.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the narrow rails of Dudley et al. into the method of Chapman to reduce the amount of material required to manufacture the frame to reduce production costs.

9. Claims 17, 19, 23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman and Dudley as applied to claim 16 above, and further in view of Wittemeier et al. (US 2,988,168).

Chapman and Dudley do not disclose assembling said rectangular frame including disposing top and bottom rails of the rectangular frame within left and right side rails of the rectangular frame.

Wittemeier et al. discloses a similar method wherein assembling the rectangular frame includes disposing top and bottom rails of the rectangular frame within left and right side rails of the rectangular frame in Figs. 1 and 2.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the disposing of the top and bottom rails into left and right side rails of Wittemeier et al. to allow the frame to be easily formed from linear segments of frame material, as suggested by Wittemeier et al. in Figs. 1 and 2.

10. Claims 20 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman and Dudley as applied to claim 18 above, and further in view of Choi et al.

Chapman and Dudley do not disclose the overall depth of the air filter being less than 0.220 inches.

Choi et al. discloses a similar air filter comprising a pleated filter media (2) wherein the overall depth of the filter media and the frame is as low as 0.05 inches in Figs. 4, 5 and 7 and col. 3, line 26 to col. 5, line 20.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the depth of Choi et al. into the air filter of Chapman depending on the nature of the fluid stream to be treated, as suggested by Choi et al. in col. 3, lines 39-41.

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11. Claims 21 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman, Dudley and Wittemeier et al. as applied to claim 19 above, and further in view of Choi et al.

Chapman, Dudley and Wittemeier et al. do not disclose the overall depth of the air filter being less than 0.220 inches.

Choi et al. discloses a similar air filter comprising a pleated filter media (2) wherein the overall depth of the filter media and the frame is as low as 0.05 inches in Figs. 4, 5 and 7 and col. 3, line 26 to col. 5, line 20.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the depth of Choi et al. into the air filter of Chapman depending on the nature of the fluid stream to be treated, as suggested by Choi et al. in col. 3, lines 39-41.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Doherty, Mertz et al. and Hoppitt et al. references disclose similar air filters.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Greene whose telephone number is (571)


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272-1157. The examiner can normally be reached on Monday - Friday (9:00 AM to 5:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason M. Greene
Primary Examiner
Art Unit 1724


2/18/06

jmg
February 18, 2006